

# RFS-700D

## Compact Rubidium Frequency Standard



Brandywine's RFS-700D is a miniaturized Rubidium Frequency Reference in a compact ruggedized package designed for mounting on a DIN rail system. The RFS-700D is capable of outputting 7x 10MHz frequency reference with low phase noise.

The frequency standard includes a low phase noise oven controlled quartz oscillator, which is frequency locked to the rubidium oscillator. The time constant of this loop is selected such that the short term stability (and phase noise) of the outputs are determined by the OCXO characteristics, which the long term stability is determined from the rubidium oscillator.

The frequency standard has internal temperature sensors that are used to compensate the oscillator, based on a factory calibration, to improve the overall accuracy of the system.

The unit has been designed to meet the requirements for MIL-STD-810F for operation in demanding environments.

## Specifications

### Power

Input Voltage Range: 18-28 VDC  
Nominal Input Voltage: 24 VDC  
Input Connector: Terminal Block  
Power consumption: 15 W

### Output

Connector type: SMA  
No. of connectors: 7  
Output Frequency: 10 MHz  
Output impedance: 50Ω  
Short term stability: 1 E-11  
Aging: 5 E-11 per Month  
Phase Noise @ 100Hz: -138 dBc/Hz  
Phase Noise @ 1kHz: -151 dBc/Hz  
Phase Noise @10kHz: -165 dBc/Hz  
Phase Noise @100kHz: -165 dBc/Hz

### Environmental

Operating temp.: -40 deg. C to +70 deg. C  
Storage temp.: -40 deg. C to +85 deg. C  
Humidity: 95% Non-condensing  
Operating Altitude: 10,000 ft. ASL  
Non-Operating Altitude: 50,000 ft. ASL

### Ethernet

Port speed: 10/100BaseT  
Protocols supported: SNMPv3  
Fault reporting: Output fail (1-7), Rb Lock Status, PLL lock status, Over current (OCXO)temp.